This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently Amended) A position determining system for determining a position of a rotor of a rotating motor, said system comprising:

sensing means coupled to the rotor for generating in response to a rotation of the rotor a quadrature signal comprising a sine component and a cosine component, and

calculating means for calculating

~~(i)~~ a sum (A^2) of a squared value of the sine component ($A^2\sin^2x$) and a squared value of the cosine component ($A^2\cos^2x$),

~~(ii)~~ an amplitude correction factor (A) as ~~the~~ a squared root of the sum (A^2),

~~(iii)~~ an amplitude corrected sine component (sin(x)) as the sine component (Asin(x)) divided by the amplitude correction factor (A) and an amplitude corrected cosine component (cos(x)) as

the cosine component (Acos(x)) divided by the amplitude correction factor (A), ~~and~~

weighting an inverse sine value of the amplitude corrected sine component (sin(x)) with a weighting factor for favoring the inverse sine value around its zero crossings to obtain a weighted sine value,

weighting an inverse cosine value of the amplitude corrected cosine component (cos(x)) with a weighting factor for favoring the inverse cosine value around its zero crossings, to obtain a weighted cosine value, and

~~(iv)~~ an output sum of ~~an~~ the weighted inverse sine value of the amplitude corrected sine component (sin(x)) and ~~an~~ the weighted inverse cosine value of the amplitude corrected cosine component (cos(x)), and

output means for outputting the output sum for determining the position of the rotor.

2.(Currently Amended) A position determining method for determining a position of a rotor of a rotating motor, said method comprising:

generating in response to a rotation of the rotor a quadrature signal comprising a sine component and a cosine component,

calculating

~~(i)~~ a sum (A^2) of a squared value of the sine component ($A^2\sin^2x$) and a squared value of the cosine component ($A^2\cos^2x$),

~~(ii)~~ an amplitude correction factor (A) as ~~the~~ a squared root of the sum (A^2), and

~~(iii)~~ an amplitude corrected sine component (sin(x)) as the sine component (Asin(x)) divided by the amplitude correction factor (A) and an amplitude corrected cosine component (cos(x)) as the cosine component (Acos(x)) divided by the amplitude correction factor (A), ~~and~~

weighting an inverse sine value of the amplitude corrected sine component (sin(x)) with a weighting factor for favoring the inverse sine value around its zero crossings to obtain a weighted sine value,

weighting an inverse cosine value of the amplitude corrected cosine component (cos(x)) with a weighting factor for favoring the inverse cosine value around its zero crossings, to obtain a weighted cosine value, and

~~(iv)~~ an output sum of ~~an~~ the weighted inverse sine value ~~of the amplitude corrected sine component (sin(x))~~ and ~~an~~ the weighted inverse cosine value of the amplitude corrected cosine component (cos(x)), and

~~output means for~~ outputting the output sum for determining the position of the rotor~~r~~.

Claims 3-4 (Canceled)

5.(Currently Amended) An optical or magnetic drive comprising

a pick-up unit for reading and/or writing information from/to an optical or magnetic medium,

a rotating motor having a rotor,

a gearbox for converting a rotating movement of the rotor into a linear movement of optical pick-up unit), and

a position determining system for determining a position of the rotor, said system comprising

sensing means coupled to the rotor for generating in response to a rotation of the rotor a quadrature signal comprising a sine component and a cosine component,

calculating means for calculating

~~(i)~~ a sum (A^2) of a squared value of the sine component ($A^2\sin^2x$) and a squared value of the cosine component ($A^2\cos^2x$),

~~(ii)~~ an amplitude correction factor (A) as ~~the~~ a squared root of the sum (A^2), and

~~(iii)~~ an amplitude corrected sine component (sin(x)) as the sine component (Asin(x)) divided by the amplitude correction factor (A) and an amplitude corrected cosine component (cos(x)) as the cosine component (Acos(x)) divided by the amplitude correction factor (A), ~~and~~

weighting an inverse sine value of the amplitude corrected sine component (sin(x)) with a weighting factor for favoring the inverse sine value around its zero crossings to obtain a weighted sine value,

weighting an inverse cosine value of the amplitude corrected cosine component (cos(x)) with a weighting factor for favoring the inverse cosine value around its zero crossings, to obtain a weighted cosine value, and

~~(iv)~~ an output sum of ~~an~~ the weighted inverse sine value of the amplitude corrected sine component (sin(x)) and ~~an~~ the

weighted inverse cosine value of the amplitude corrected cosine component (cos(x)), and

output means for outputting the output sum for determining the position of the rotor.